Biosystematics and Ecology 3 2024, 353–354 | DOI 10.1553/biosystecol.3.e142996 Editorial

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AUSTRIAN ACADEMY OF SCIENCES PRESS

The digital launch of Biosystematics and Ecology

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Published 9 December 2024

Biosystematics and Ecology (BiosystEcol) is the digital relaunch of the established Biosystematics and Ecology Series, the publication outlet of present and past Biodiversity Commissions of the Austrian Academy of Sciences (OeAW). Since April 2024, the responsibility for the journal has been taken over by the Commission for Biodiversity in Austria (BiodivA). The new digital format provides immediate open access to its content on the principle of making research freely available to the public, to support a greater global exchange of knowledge. BiosystEcol is a scientific peer-reviewed, open access journal, designed to rapidly publish contributions on ecology- and biosystematics-related topics that are relevant for the scientific community or the society as well, and in particular checklists and catalogi of the biodiversity in Austria. If needed, it is possible to produce print-on demand hardcopies. Our motivation to go online was to ensure maximum possible accessibility, usability, and transparency for both the scientific and biodiversity data monitoring communities, as well as persons and institutions interested in the state of biodiversity and environment. Due to the continuing support of the OeAW, publications focusing on the documentation of biodiversity are free of charge for authors and open access.

The journal was founded as publication outlet of earlier Commissions of the Austrian Academy of Sciences and goes back to the year 1946 when the first Catalogus Faunae Austriae was published by the Publishing House of the Austrian Academy of Sciences. Especially the catalogi and checklists developed to important sources of information on biodiversity, systematics and ecological issues and made the OeAW one of the centers of organismic biology in Austria. The new publication format is intended to address further scientific communities and to improve the visibility and accessibility of the information. The journal is now incorporated into the ArphaHub journal family, but continues to be published by the Publishing House of the Austrian Academy of Sciences.

As the advancement of knowledge about the Austrian and world-wide biodiversity represents one of the central missions of BiodivA, a key focus of Biosystematics and Ecology remains to publish high-quality biodiversity data in the form of species inventories (catalogi) and biodiversity surveys (checklists) of ultimately all groups of native organisms. However, the field of biological systematics has changed dramatically in the last 50 years, leaving the safe grounds of traditional systematics with its focus on adequately describing entities with the purpose to categorize and recognize them, towards a dynamic evolutionary perspective. A timely taxonomic account strives to mirror the position of a species in the tree of life and its ecological relationships to other entities of the respective species community. This taxonomic revolution started with traditional tools of comparative anatomical research through Willi Hennig in Germany in the 1950ies, developed further by Robert Sokal and his colleges in the USA in the 1970ies but gained dramatic speed through the discovery of PCR by Kary Mullis advancing the field to the era of molecular systematics. Within 15 years, the book about the history of living beings was rewritten and many biosystematic dogmata such as the phylum Articulata as a monophyletic unit had to be abandoned. Meanwhile, we called the age of evolutionary genomics boosting evolutionary systematics to the next level.

Aside of the rapid advancement of biological knowledge, we are facing the increasing endangerment of our fauna, flora and funga. Clearly, biodiversity research has to face a new formidable challenge in the form of the sixth mass extinction. The members of the BiodivA and the editorial board of BiosystEcol take up this challenge which can only be addressed by an interdisciplinary approach. Evolutionary processes and subsequently

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ecological or biosystematic relationships can only be understood by connecting the changing genotype to its phenotypic counterpart under the challenges of a changing environment. Such a holistic approach connects basic biosystematics groundwork with high-tech science. Interestingly, the scientific community and funding agencies tended to increasingly disregard biodiversity inventories and systematic classifications as non-hypothesis driven and consequently second-class science, so that it became more and more difficult to fund this sector, while the emerging molecular biological techniques received most of the attention and money. Biodiversity inventories were considered of local relevance only and it became difficult to publish internationally because of increasing publication fees. Ironically, this trend is in clear contrast to our current challenges resulting from anthropogenic climate change, environmental pollution, excessive land use and non-sustainable agriculture, with effects and consequences on the whole planet and thus clearly surpassing the arising human concerns. Thankfully, the awareness is finally spreading that we are facing the era of the sixth mass extinction and that we urgently need up to date biodiversity accounts and their effective publication.

The new fully digital format of our Journal permits the linkage of a wide array of biological data among existing and future data bases. BiosystEcol is open to contributions (floristic/faunistic/mycological, morphological, genomic, phylogenetic, ecological, or environmental data) on any taxon of any geological era from any part of the world with no lower or upper limit to manuscript size. In our new open access online format biodiversity data now can be tightly linked with other data bases, e.g. red lists stating endangerment, GIS-information, DNA-barcodes and photos. In addition, checklists and catalogi can now be easily updated and receive a new DOI, so that previous accounts remain as dated historic record.

We also continue to welcome papers on species ecology, as well as research on ecology in general. Since we incorporated the former KIOES Opinions series in the digital re-launch of BiosystEcol, we continue to publish also articles that are relevant for society and decision makers, as stand-alone opinion papers, or grouped in special issues. Concerning the full line of article types, please refer to the journal homepage.

The new international format had consequences for our language options. BiosystEcol continues to publish articles of local relevance and focus but is now fully open for international contributions as well. It makes thus much sense to continue the option to publish in German language for articles of local relevance but encourage publications in English in all other cases. An abstract in English is mandatory. Text and data submitted to this journal will be formally peer-reviewed and evaluated for technical soundness and the correct presentation of appropriate and sufficient metadata.

Manuscript submission is a straightforward process comparable to other journals in similar academic disciplines. Authors may submit the entire manuscript as a text document with embedded artwork (in low resolution). High-resolution figures need to be uploaded separately. The system automatically generates a review PDF which is sent to the editorial office where a first technical assessment takes place. Following a positive evaluation by the respective subject editor/s, the manuscript will be forwarded to at least two independent reviewers (single-blind review process) for their evaluation. Depending on the outcome, the subject editor may decide that additional revision is necessary or to accept/reject the manuscript right away. The editorial board endeavors to decide upon the manuscript within two months after submission.

Our mission for making our digital relaunch a success is threefold. Firstly, we strive to feed all ongoing projects on the biodiversity of Austria into our new outlet. These are accounts of the macrophyte flora, diplopods, dipterans, pauropods, Characeae and ground beetles. Secondly, we plan to feed all recently published checklists into the digital system. This will add checklists on ants, liverworts, fishes. But most importantly, we cordially invite you to consider publishing your biodiversity accounts or related topics in our traditional but now fully digital journal!

Christian Sturmbauer and Viktor J. Bruckman,
on behalf of all the editors of Biosystematics and Ecology